



PRE-APPEAL BRIEF REQUEST FOR REVIEW		Docket Number (Optional) 1906-0117P	
	Application Number 10/609,374-Conf. #1201	Filed July 1, 2003	
	First Named Inventor Miroslaw Z. BOBER et al.		
	Art Unit 2624	Examiner W. J. Tucker	
<p>Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.</p> <p>This request is being filed with a notice of appeal.</p> <p>The review is requested for the reason(s) stated on the attached sheet(s). Note: No more than five (5) pages may be provided.</p> <p>I am the</p> <p><input type="checkbox"/> applicant /inventor.</p> <p><input type="checkbox"/> assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)</p> <p><input checked="" type="checkbox"/> attorney or agent of record. Registration number <u>29,680</u></p> <p><input type="checkbox"/> attorney or agent acting under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34. _____</p> <p>NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below".</p>			
<input type="checkbox"/> *Total of <u>1</u> forms are submitted.		 #58,755 Signature  Michael K. Mutter Typed or printed name (703) 205-8000 Telephone number November 29, 2007 Date	

INTRODUCTORY COMMENTS

Applicants respectfully request review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed concurrently with a Notice of Appeal.

The review is being requested for the reason set forth on the attached five (5) sheets.

ARGUMENTS

The pending rejection exhibits clear factual and legal errors with respect to the cited reference. Applicants respectfully submit that the Examiner has made the following clear error:

The Examiner is improperly interpreting and applying the prior art in rejecting independent claims 17, 28-30, 35, and 36 under 35 U.S.C. § 102(b) as allegedly being anticipated by Osada (U.S. 5,629,989)[hereinafter "Osada"]. The Examiner is also improperly interpreting and applying the prior art in rejecting independent claims 30, 35, and 36 under 35 U.S.C. § 102(b) as allegedly being anticipated by Sano et al. (US 5,638,465)[hereinafter "Sano"].

For a Section 102 rejection to be proper, the cited reference must teach or suggest each and every claimed element. *See M.P.E.P. 2131; M.P.E.P. 706.02*. Thus, if the cited reference fails to teach or suggest one or more elements, then the rejection is improper and must be withdrawn. Osada simply fails to teach each and every element of the independent claims 17, 28-30, 35 and 36. Further, Sano simply fails to teach each and every element of the independent claims 30, 35 and 36.

1. Osada fails to teach accumulating selected points onto one of the axes of the Hough space as claimed in claims 17, 28, and 29

It is respectfully submitted that Osada fails to teach or suggest each and every claimed element of independent claims 17, 28, and 29. For example, independent claim 17 recites, *inter alia*, "projecting and accumulating the selected points onto the axis or axes for m of the n variables, corresponding to the n -dimensions of the Hough space, where m is less than n , and analysing the m variables and the corresponding accumulated values to derive information about the features in the image space." Independent claims 28 and 29 recite means and a computer readable medium, respectively, for performing the above-identified claim features of claim 17. It is respectfully submitted that Osada does not teach or suggest at least the above identified claim features of independent claims 17, 28, and 29.

The Examiner contends that Osada accumulates a histogram from the points in a Hough space rendering peaks of the histogram to be used in determining further image information, and therefore, Osada anticipates the above-identified claim feature of independent claims 17, 28, and 29. (See page 2, section 3 of the final Office Action.) Applicants submit that the Examiner's interpretation of Osada is clearly erroneous.

Osada merely discloses an image line-segment extracting apparatus including an image pick-up portion 1, an edge detecting portion 2 for detecting an edge of the image transmitted from the image pick-up portion 1 by differentiating a digitized image consisting of pixels, a Hough transform portion 3 for transforming a sequence of dots composing the detected edge in an image into Hough function curves, a histogram plotting portion 4 for making a histogram of Hough function values, and a line-segment extracting portion 5 consisting of a microcomputer which detects a frequency peak of the histogram and selects and extracts a line-segment from the image, judging that a sequence of dots composing the image edge corresponding to the Hough function curves passing the detected peak is the line segment, and which also conducts the concentrated control of the whole system of the apparatus. Osada is particularly concerned in determining a region and an amount of influence of a remarkable peak upon frequency distribution of a histogram plotted by the histogram plotting portion 4. Further, Osada discloses a means to judge whether detected peaks other than the remarkable peak lie in the region or not and means to correct frequency values of the other peaks judged to be in the defined region according to the determined amount of influence. (See col. 3, lines 17-46.)

As demonstrated above, claims 17, 28, and 29 requires that selected points in the Hough space are accumulated onto the axis or axes for m of the n variables of the n dimensional Hough space, and the m variables and the corresponding accumulated values are analyzed to derive information about the features in the image space. That is, the analysis involves the accumulated values of the selected points and the corresponding values of the variables (see, for example, Fig. 8).

Conversely, in the case of a Hough transform into 2-dimensional Hough space, as in Osada, after the histogram is calculated in Hough space, the selected points (for example, peaks) are detected, and then accumulated onto an axis, such as the θ axis. The accumulated values and the corresponding values for θ are analyzed which can provide additional information about features, such as lines, in the original image.

Although Osada describes a technique involving the Hough transform, including deriving a histogram in Hough space and detecting peaks, it is respectfully submitted that Osada does not disclose or suggest accumulating (or summing) peaks onto one of the axes of the Hough space as claimed by the Applicants. Thus, it is respectfully submitted that Osada cannot anticipate, at least, “projecting and accumulating the selected points onto the axis or axes for m of the n variables, corresponding to the n-dimensions of the Hough space, where m is less than n, and analysing the m variables and the corresponding accumulated values to derive information about the features in the image space” as recited in independent claims 17, 28, and 29.

2. Osada fails to anticipate independent claims 30, 35, and 36

Although the Examiner states that claims 17-24 and 28-36 are rejected under 35 U.S.C. § 102(b) as being anticipated by Osada, (*see page 3, section 4 of the final Office Action*) Applicants note that the Examiner fails to provide any explanation in the final Office Action as to how Osada is being interpreted in rejecting independent claims 30-36. Thus, Applicants assume that the Examiner did not intend to reject claims 30-36 under 35 U.S.C. §102(b) as being anticipated by Osada. Even if Applicants’ assumption is wrong, it is respectfully submitted that Osada fails to teach or suggest each and every claim element of independent claims 30, 35, and 36. Particularly, Applicants submit that Osada fails to teach any step of deriving a threshold by combining histograms in Hough space as recited in claims 30, 35, and 36.

3. Sano fails to anticipate independent claims 30, 35, and 36

Independent claim 30 recites, inter alia, “generating a plurality of reference images, for each reference image performing a Hough transform and deriving a histogram of accumulated values in Hough space, combining the histograms for the reference images, and using the combined histograms to derive a threshold.” Independent claims 35 and 36 recite means and a computer readable medium respectively for performing the above-identified claim features of claim 30. It is respectfully submitted that Sano does not teach or suggest the above-identified claim features of independent claims 30, 35, and 36.

Conversely, Sano merely discloses an image inspection method to decide whether a portion of an image is good or not good. In order to achieve this objective, Sano first obtains a feature image from an input image. Then, Sano quantizes the feature image and obtains a similarity of or difference between feature points of the quantized feature image through the use

of training data of corresponding features pre-extracted from a plurality of training images. The weights of the feature points are pre-calculated using feature value histograms at a respective feature points in quantized feature images of the plurality of training images, and the pre-calculated weights are used to obtain the similarity or difference as weighted similarity or weighted difference. Sano further discloses that the weighted similarity may be obtained by a generalized Hough transform and the weighted difference is calculated by obtaining a Hough plane by subjecting the quantized feature image to a weighted Hough transform operation which votes the weight of the feature point into the parameter space for each quantization level and by calculating the difference between the Hough plane and a reference Hough plane obtained from the feature image of the training image. (*See col. 6, lines 31-63.*)

Applicants respectfully submit that Sano fails to teach any step of deriving a threshold by combining histograms in Hough space. Even if the passage in col. 18, lines 31-34 ("When the condition for stopping feature combination holds, a threshold value T_h for separating good and no good objects is determined in a threshold determining step 119") is interpreted as deriving a threshold, nowhere does Sano teach or suggest "for each reference image performing a Hough transform and deriving a histogram of accumulated values in Hough space, combining the histograms for the reference images, and using the combined histograms to derive a threshold" as recited in claims 30, 35, and 36. Accordingly, it is respectfully submitted that Sano cannot anticipate independent claims 30, 35, and 36.

Dependent claims 18-27 and 31-34 are at least allowable by virtue of their dependency on corresponding allowable independent claims.

Reserve right to appeal other errors

While Applicants believe the above points represent the clearest errors made by the Office, Applicants reserve the right to Appeal on other bases and errors. In addition, Applicants believe that the rejection of other claims not identified above is also based on one or more Office errors. Applicants will address such issues on Appeal should the Appeal of this case proceed after the Office's consideration of this paper.

CONCLUSION


In view of the foregoing, Applicant respectfully submits that the application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact Ali M. Imam (Reg. No. 58,755) at (703) 205-8000 **to schedule a Personal Interview.**

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Dated: November 29, 2007

Respectfully submitted,

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